

**Application No.** : 09/890,366  
**Filing Date** : July 26, 2001  
**Amdt. Dated** : August 27, 2004  
**Reply To Office**  
**Action Dated** : April 28, 2004

### **REMARKS**

The foregoing amendments to the claims are responsive to the April 28, 2004 Office Action in which the Examiner rejects Claims 1, 4, and 5 under 35 U.S.C. § 102(b) as being anticipated by German Publication No. DE 3206178 to Huber et al. and under 35 U.S.C. § 112, first and second paragraphs. As discussed more fully below, Applicants respectfully traverse the Examiner's rejection under 35 U.S.C. § 102(b) and under 35 U.S.C. § 112, first and second paragraphs.

#### **Discussion of the Amendments**

By the foregoing amendments, Applicants have Amended Claim 1, canceled Claims 4 and 5 without prejudice or disclaimer, and added new Claims 6-14. No new matter is introduced by the amendment of Claim 1 or by the addition of Claims 6-14.

#### **Substance of Interview of July 30, 2004**

Applicants wish to thank Examiner Hoffman for the courteous interview extended to Applicants' counsel, Michael A. Guiliana, on July 30, 2004, during which the outstanding rejections were discussed. During the interview, Applicants' counsel pointed out that the outstanding rejection of the claims as being anticipated is based largely on the Examiner's belief that the Huber et al. reference teaches that the laser beam therein intersects a flame. Applicant's counsel explained that such a position is not supported by the Huber et al. reference literally or inherently. In accordance with the interview, Applicants have set forth below a more detailed discussion of the law of inherency. Additional detail regarding the substance of the interview is also reflected in the comments below.

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## Response to Rejection of Claims

As the basis for rejecting the claims under 35 U.S.C. § 102(b), the Examiner states "Huber does substantially the same thing that Applicant does, therefore, one would expect to get the same results." Essentially, the Examiner's position is that Huber et al. teaches that the laser beam therein intersects the flame in which nano-particles are formed.

Applicants would like to point out that it has long been established that

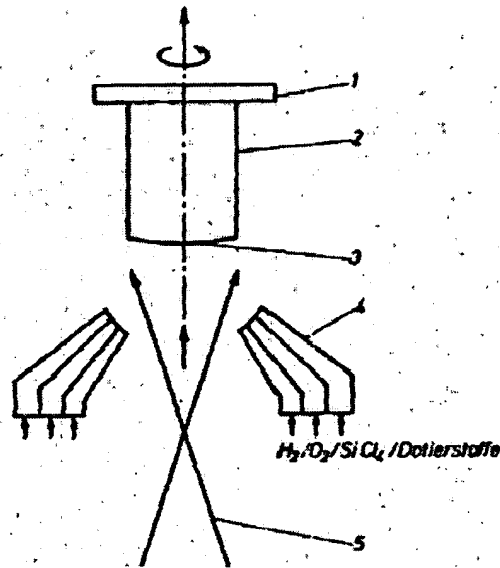
The fact that a certain result or characteristic **may occur** or be present in the prior art is **not sufficient to establish the inherency** of that result or characteristic...To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing **may result** from a given set of circumstances is not sufficient...In relying upon the theory of inherency, the examiner **must provide** a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic **necessarily flows** from the teachings of the applied prior art.

MPEP § 2112 (Emphasis added).

During the interview, it also became apparent to Applicants' counsel that the Examiner is relying heavily on the scale and/or the proportions of the elements shown in Figure 1 of Huber to conclude that the laser 4 is intersecting a flame. Applicants submit that it has long been established that the "proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale." MPEP §2125

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During the interview, Applicants' counsel pointed out that the Huber et al. reference does not show that the laser beam 5 intersects a **flame** (not shown). Rather, as shown in the enlarged portion of Huber's Figure 1 reproduced adjacently hereto, Huber et al. only shows that the laser strikes the substrate **after** the particles are deposited on the substrate. Nowhere does Huber et al. show that the laser beam 5 intersects a **flame**.



The only disclosure in Hubert et al. that describes the interaction of the laser beam and the nano-particles indicates that the laser melts the aggregates **after** they are deposited onto the substrate 3.

Further, nothing in Huber et al. indicates that Figure 1 is drawn to scale. Thus Applicants submit that the proportions of the elements shown in Figure 1 of Hubert et al. cannot be relied upon to reach the conclusion that the laser 5 necessarily intersects the omitted flame. Rather, Applicants submit that it is possible that the flame in the Hubert et al. reference, if any, is annular in shape and the laser 5 does not intersect it. Thus, Applicants submit that the laser 5 of Hubert et al. does not **necessarily** intersect any flame.

In contrast, Claim 1 recites, among other recitations, "irradiating at least one laser beam into the aggregates so that said aggregates are fused, to thereby reduce said aggregates into smaller fine particles; and growing said fine particles; wherein said laser beam is irradiated into the flame where the aggregates start being formed, in a direction perpendicular to a direction in which the aggregates move." Hubert et al. does not disclose or suggest these features.

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Thus, Applicants submit that Claim 1 clearly and non-obviously defines over the Hubert et al. reference.

New Claim 12 recites, among other recitations, "irradiating at least one laser beam onto said aggregates in the flame at a position below the top of the flame so as to fuse said aggregates in the flame, and such that the aggregates flow past of the laser beam and continue to collide with at least one of other aggregates and particle nuclei in the flame after leaving the laser beam." Hubert et al. clearly does not describe or suggest a scenario in which particles in a flame are irradiated with a laser beam, then allowed to flow past the laser beam while in a flame. Rather, Hubert et al. discloses that the laser only irradiates particles **after** they have been deposited on the substrate 3. Thus, Applicants submit that Claim 12 also clearly and non-obviously defines over the Hubert et al. reference.

Applicants also submit that Claims 6-11, 13, and 14 also define over the Hubert et al. reference, not only because they depend from Claims 1 or 12, but also on their own merit.

#### **Claims 1, 4, and 5 Fully Comply With 35 U.S.C. § 112**

The Examiner rejected Claims 1, 4, and 5 as being indefinite under 35 U.S.C. § 112, second paragraph. Applicants respectfully traverse the present rejections. However, in order to expedite prosecution of the present application, Applicants have amended Claim 1 solely to make this claim more easily readable and not to narrow or affect the scope of this claim. Claims 4 and 5 have been canceled without prejudice or disclaimer, and thus, the rejections of these claims are now moot.

In response to the rejection of Claim 1 based on the recitation of the phrases "formed in a burner", "the aggregates", "non-agglomerate", "non-agglomerate and smaller particles", "the synthesis", "non-agglomerate and smaller nanoparticles", and "nanoparticles" Applicants have amended Claim 1 to

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remove the phrases "non-agglomerate", "the synthesis", and "smaller nanoparticles". Additionally, Applicants have re-worded Claim 1 to include the term "said" to clarify antecedent basis for several terms.

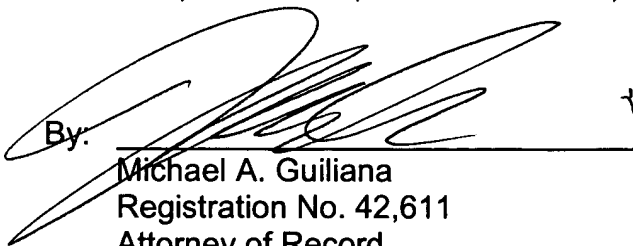
With regard to the rejection of Claim 1 under 35 U.S.C. § 112, first paragraph, based on the phrases "non-agglomerate", Applicants respectfully traverse this rejection. However, as noted above, the term "non-agglomerate" has been deleted from Claim 1. Thus, the present rejection is now moot.

#### **Request For Telephone Interview**

In view of the forgoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If further issues remain to be resolved, Applicants' undersigned attorney of record hereby formally requests a telephone interview with the Examiner. Applicants respectfully request the Examiner to call the undersigned attorney of record at 949-721-6384 (direct) or at the general office number listed below.

Respectfully submitted,  
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 8/27/04

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